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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DANIELS, MATTHEW J

ART UNIT

PAPER NUMBER

1791

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,816	<b>Applicant(s)</b> OGINO ET AL.	
	<b>Examiner</b> MATTHEW J. DANIELS	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3-11, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-11, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/21/10</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 3-11 and 25-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 5 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no description of the curvature at the periphery of the mold being larger than the curvature at the center. The Examiner has carefully considered page 3, lines 9-12 and page 4, lines 10-14 of the specification, but is of the view that these portions of the specification only discuss a convex mold, and do not provide support for the change in curvature recited by the amendment to Claim 5.

2. **Claims 7-11** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claims 7-11 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is noted that independent claim 5 has been significantly amended since it was first presented in the 18 March 2004 claims. Reconsideration of the specification reveals that there is no description in the specification which reasonably conveys to one skilled in the art that the

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inventors had possession of the invention of claim 5 *in combination with* the subject matter of instant claims 7-11. For example, in embodiments where the supporter is used, the mold and supporter are depicted as being flat. There is no indication that Applicants had possession of an embodiment in which the curved base member and mold with a curved surface (see claim 5) was used in combination with a light-transmitting mold (instant claim 7), a flexible mold (instant claim 8), or a mold secured to a supporter via an elastomer at its edge (instant claims 9-11). The Examiner has considered the cited portions of the specification, but remains of the view that the combinations recited by these claims are not supported by the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 3-5, 7-10, and 25-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sreenivasan (US 2004/0009673) in view of Rowe (US 2201302). **As to Claim 5**, Sreenivasan teaches a nanoprint mold comprising a structure including a pattern member having a concave-convex pattern and a deep groove at approximately its center (Figs. 20A and 20B) which extends to and is open to the periphery portions for use with a press machine (Fig. 1) which would implicitly allow for removal in the claimed manner (provides a release starting point). The Sreenivasan mold may be a laminate (Fig. 34) and is inherently suitable for performing the intended use of deforming a flat resin substrate.

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Sreenivasan is silent to the base member having a curved surface, and to the change in curvature between the periphery and the center.

However, Rowe teaches that in using a stamp, it is known to provide a laminate structure and a curved surface (19, 24, 13). The Rowe stamp is inherently suitable for pressing against a flat resin film.

Additionally, the change in curvature between the periphery and the center is a limitation drawn to the shape or size of the article. Rowe provides a spherical shape to conform to articles also having a spherically concave surface. However, one would have adapted the shape of the device to conform to any article curvature.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to incorporate the stamp of Rowe into that of Sreenivasan because one would recognize the Rowe techniques as applicable to the similar Sreenivasan method which would provide the expected result that the stamp would be capable of conforming to curved surfaces, thereby increasing the applicability of the stamp.

**As to Claims 3 and 4**, in the Rowe process, a portion of the center is larger in thickness than the periphery (Fig. 4). However, Rowe suggests that this configuration is chosen merely because the particular embodiment is performed on a spherically concave surface. However, in view of the teachings of Rowe, one would have found it obvious to adjust the stamp configuration to also print on convex surfaces. Once it is recognized that the stamp may be adjusted to print onto concave surfaces, one would have also found it obvious to provide the opposite configuration as recited in Claim 4. **As to Claim 7**, Sreenivasan teaches a transparent template ([0007], [0104]). **As to Claims 8-10**, Rowe teaches that it is known to provide a

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flexible mold secured to a support by a substance which is interpreted to be an elastomer (page 1, right col., line 40) in a circular configuration (Fig. 3). **As to Claim 25**, the deep groove of Sreenivasan is configured in the same manner as the claimed mold. **As to Claim 26**, Sreenivasan teaches concave or convex portions having a feature size of less than about 250 nm ([0118]).

4. **Claims 6 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sreenivasan (US 2004/0009673) in view of Rowe (US 2201302), and further in view of Chou (US 2002/0132482). Sreenivasan and Rowe teach the subject matter of Claim 5 above under 35 USC 103(a). **As to Claim 6**, it is unclear if Claim 6 is limiting on the invention of Claim 5 since peripheral components such as heating and pressing mechanisms do not further limit a mold. Sreenivasan provides a pressing mechanism (Fig. 1) and suggests heating ([0206]), but it is unclear whether Sreenivasan provides a heating mechanism. However, Chou teaches that several means can be used interchangeably to soften or cure the film such as UV and heating ([0027]). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the apparatus of Chou into that of Sreenivasan since Sreenivasan teaches UV curing and suggests a heat activated curing mechanism ([0206]), and Chou teaches that UV and heat can be used additionally or interchangeably with UV ([0027]). **As to Claim 11**, Sreenivasan is silent to the elastomeric edge to facilitate release. However, Chou teaches a peripheral elastomeric gasket which separates the mold from the material to be imprinted (Fig. 3, item 32, [0027]). Since the mold would compress into the material to be imprinted (the material on item 20), which would require compression of the gasket, removal of the mold from the resist

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would also be assisted by the gasket. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the gasket of Chou into the stamp of Sreenivasan in order to allow for imprinting by external fluid pressure.

### ***Response to Arguments***

5. Applicant's arguments filed 1 April 2010 have been fully considered but they are not persuasive. The arguments are on the following grounds:

a) Claims 7-11 are supported, and the Office Action errs in referring only to the specific embodiments in the specification.

b) One would not have found the Rowe techniques applicable to the template of Sreenivasan.

c) The spherically concave surface on which Rowe prints is not made of deformable materials such as a resin film. Rowe teaches away from the present invention since Rowe matches the template to the surface.

6. These arguments are not persuasive or are moot for the following reasons:

a) The Examiner maintains that the combination now set forth in Claims 7-11 is not supported by the specification.

b,c) The Examiner respectfully disagrees. While Sreenivasan does appear to process flat substrates, this does not mean that any other substrate configuration (and an appropriately shaped mold configured to such a substrate) would have been unobvious. Rowe teaches generally that when a non-flat substrate is used, the template or stamp should be made to conform to that

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substrate shape. Notwithstanding the new § 112 rejection above, the amended subject matter appears to be drawn merely to a particular mold shape. However, such changes in shape are generally obvious to the ordinary artisan, especially in a situation like this where molds or templates are made specifically to conform to substrate shapes.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. DANIELS whose telephone number is (571)272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew J. Daniels/  
Primary Examiner, Art Unit 1791  
7/1/10